Mission-Critical Data Interoperability Product Suite
Surveillance Data Validation, Filtering, Conversion & Distribution

Systems Design, Engineering, Production, Integration, Installation & Support
T&E, V&V, Post Operational Support Services

Corporate Capabilities
The Corporation

- Incorporated in 1991
- Headquartered in West Berlin New Jersey (45 minutes from the FAA William J. Hughes Technical Center (WJHTC))
  - Distribution offices in China & Brazil

We Offer ...

1. Mission Critical Data Interoperability
   - Suite of Products
2. System Design, Engineering, Production, Integration, Installation & Support Services

- 32,000sf facility
- ISO 9001:2000 certified
- Operations tailored to FAA process compliance
Our Expertise

Air Traffic Control (ATC) & Air Traffic Management (ATM) Specialists

- Surveillance Communications Information Management
  - Collection, Distribution, Filtering & Conversion of Radar & other Surveillance Information as well as Flight Data Information
    - ✔ Real Time Interface & Conversion
    - ✔ Sensor Data Formatting, Filtering & Data Conversions
    - ✔ FAA & Eurocontrol Standard Protocol Conversions
    - ✔ Data Generation & Simulation Analysis & Tools

- Suite of Managed Surveillance Gateway Products
- Integration and Deployment
Customers & Partners Around the World ...
Capability Example: Suite of Gateway Products

Connection, Collection, Distribution, Filtering, Management & Conversion of Data

Environment

Ethernet
- 10BASE-T, 100BASE-T, 1000BASE-T
- Gigabit Ethernet
- IEEE-802.3

Protocols
- Synchronous
- Asynchronous
- Bi-Synchronous
- Mono-Synchronous
- HDLC/SDLC
- TCP/IP; UDP/IP

(Special Use Designs)
- Analysis, Test & Conversion Design Services

Serial
- RS-232/422/499/485
- X.21, V.11/V.35/V.28
- EIA-530 & EIA-530A

Sources of Data

Radar

ADS-B

Multilateration & Mode S

Mode S

Special Data Interface & Extrapolation
- FDIO, ECG, ERAM, STARS, TAMIR, DSR
Product Family

- **Real Time Interface & Conversion Item (RICI)**
  - Compact, Scalable & Inexpensive
  - Low-density, high-speed system interfacing to multiple serial ports

- **Longport – Surveillance Data Distribution Platform**
  - Surveillance sensor distribution & messaging conversions (STARS SIU replacement, ASR11/DASR, ATCBI6 messaging), 100% plug in replacement with some added features:
    - Faster 10/100/1000 Base T Ethernet Switch
    - Net-Centric capabilities included (SOA)
    - SNMP Monitor and Control Console available
Longport Features

- **The best product of its kind in the market**
  - 10/100/1000 (1Gig) Ethernet Switch v. Hub – based
  - Highest Performance
    - 5-10ms v. 30-50ms latency
    - All 4 ports (card) run at 56KB v. just 1 port
  - More efficient power design
    - No heating issues – stackable units
  - Web-based configuration
  - SNMP Monitoring and Control application
  - Flexibility in the standard Linux 2.6 v. QOS embedded

- **And...**
  - Supportable for an indefinite period of time
    - Power-PC based architecture
  - Our Corporate Commitment
RICI / Longport Features

- Modes of Operation
  - Serial-to-LAN
  - LAN-to-Serial
  - Serial / LAN only

- Filtering
  - Site
  - Radar Messages: ASR-9, CD-2
  - ASTERIX Messages: CAT 1/2 & 34/48, ADS-B (CAT23/33)
  - Codes: Mode 3/A Range Azimuth Gate (RAG), CD2 RAG Clutter

- Radar Display
  - Graphical representation of radar data
Product Family

- **Surveillance Gateway Processor (SGP)**
  - Powerful, versatile & modular 1U platform
  - LAN to LAN surveillance sensor data formatting, filtering & protocol conversions
  - Fault-tolerant RAID
  - Dual Gigabit Ethernet ports

- **Surveillance Generator & Analysis Tool (SGAT)**
  - Simulated high data loads, alerts & target data
  - System stress modeling for load testing
  - Auto-generated surveillance tracks
  - Scenario re-creation & playback
Conversion Capabilities

- ECGP to CD & CD to ECGP conversion
- Sensis Generic Format to ASR-9 conversion
- Sampling of Tier 1 Conversions/Features
  - ARTS to CD-ASR
  - ASR-11 ASTERIX to CD-ASR
  - CD to ASTERIX CAT033/CAT048
  - Multiple formats to ASR-11 ASTERIX (e.g. CAT001/CAT002/CAT008)
  - ASR-9 to CD-2 or ASTERIX
  - ARSR-4 to CD-2
  - ASTERIX CAT001/CAT002 to CD-2 or AIRCAT500
  - Radar plots and tracks to ASCII-delimited data
  - Targets to Keyhole Markup Language (KML) for display
  - Weather data to ASTERIX CAT 008
  - SGF to serial CD-2 or ASTERIX cats
  - Interfacility

- Tier 2 Conversions/Features
  - ADS-B to CD-2 (Virtual radar)
  - CV4400 emulation
Capability Example: Surveillance Data Software

**Surveillance Data Distribution System**

- Multiple diverse sources to diverse users, Tracking
- Provide for dynamic & static load balancing
- Provide services to validate, filter & convert the data
- Provide a monitoring & control system
- Surveillance aware
  - Monitors the Quality of Service of surveillance data

![Diagram of Surveillance Data Distribution System](image)

- **Message Data Process**
  - Stream Separation
  - Validation
  - Filter
  - Conversion
  - Stream Distribution

- **Surveillance**
  - Radar
  - MLAT
  - ADS-B
  - Mode-S

- **Configuration**
  - Adaptable Parameters
  - Variable Parameters

- **System Archive Data Recording**
  - Logging
  - Data Recording

- **Off-line Diagnostics Tools**
  - Recording Analysis
  - Statistics Analysis

- **Maintenance**
  - Startup
  - Health
  - Redundancy
  - Security
  - SNMP Agent
  - Command
  - Control

- **User Interface**
  - SMC

- **Network**
  - IP-LAN
  - Serial

- **Communication**

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Applications: Visualization and Tools

The Track Generator, creates target surveillance scenarios by generating targets that fly along routes for the following sensor types:

- CD2, ASR9
- ASTERIX Categories 034/048
- Categories 001/002 (Euro Control and ASR11)
- Categories 033/023 (ADSB),
- Categories 062/65
- ASDE-X
Applications:
Monitoring & Control - Sunhillo VantagePoint

- SNMP Monitoring & Control for Surveillance Data
Capability Example 3: Systems Integration and Deployment

- **ADS-B Service Delivery Point:**
  - Real-time Interface Conversion and distribution (RICI or SGU) products
  - ASTERIX Conversions
  - Virtual Radar for GOMEX at Houston ARTCC
  - Performance Meas. Servers
  - Routers / Networking
  - Power Sequencers / UPSs
  - Fully Redundant solution
  - Testing to FAA-G-2100, UL, and FCC
  - Field Deployed by Sunhillo

**SDP - Interfacing ADS-B with FAA systems at all ATC facilities**
Applications:
FAA ADS-B ConOps with ITT
Future

FAA & NextGen Community

- ADS-B
- DataComm
- SWIM

ANSP Community, CAAs, SESAR & International Regulatory Advisory Services

DOD & MOD Community

Strategic Partnerships